Database on Thermodynamic and Rheological Properties of Substances under Extreme Conditions

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The database contains about 15000 experimental points on shock compressibility, sound velocity in shocked samples, and adiabatic and isobaric expansion for more than 400 substances [1]. Recently we have added data on shock Hugoniots of explosives as well as experimental free surface velocity profiles, which give the information on rheological properties of matter during very fast loading [2]. The database can be accessed via the Internet. We used freeware only for system development: PostgreSQL database server, Apache Web server, Perl and PHP languages. There is the ability to output data in graphs with experimental points, different approximations, and results of calculation with wide-range equations of state [3-4]. The user can also make calculations of shock Hugoniots, isentropes, isobars, isochors and other thermodynamic curves using different models of equations of state. The output is presented in tabular, plain text and graphical forms.

URL: http://teos.ficp.ac.ru/rusbank/.

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